

**Before the  
Federal Communications Commission  
Washington, D.C. 20544**

|  |   |                      |
|--|---|----------------------|
| In the Matter of                             | ) |                      |
|  | ) |                      |
| Service Rules for Advanced Wireless Services | ) | WT Docket No. 07-195 |
| In the 2155-2175 MHz Band                    | ) |                      |

**COMMENTS OF  
THOMAS M. LENARD, PH.D.  
PRESIDENT AND SENIOR FELLOW  
THE TECHNOLOGY POLICY INSTITUTE**

**I. INTRODUCTION**

I am submitting these comments in response to the Notice of Proposed Rulemaking on Service Rules for Advanced Wireless Services in the 2155-2175 MHz band (AWS-3).<sup>1</sup> The Commission is proposing to auction the AWS-3 spectrum (which includes a 5 MHz guard band) subject to rules that would require the winner to offer a basic tier of free wireless broadband service that virtually the entire U.S. population could access.<sup>2</sup> The rules also require the service to filter out “indecent” material. The service conditions are similar to those in an application submitted by M2Z in May, 2006 to obtain this spectrum for free. Under the current proposal, the winner of the spectrum

---

<sup>1</sup> These comments represent the views of the author and not necessarily the views of the Technology Policy Institute, its board or its staff.

<sup>2</sup> [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-07-164A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-07-164A1.pdf)

must provide a basic free 768 kilobits per second service that would reach 50 percent of the population in four years and 95 percent of the population in ten years.<sup>3</sup>

These comments make the following points:

- The proposal to allocate the AWS-3 spectrum for a specific use represents a step backward from a market-based approach in favor of the command-and-control approach that had been largely abandoned due to its inherent inefficiency. A market-based system allocates spectrum to its highest-valued uses and better promotes competition and innovation.
- No market failure justifies the proposal to provide ubiquitous free broadband service. Moreover, the service provided is likely to be obsolete by the time it becomes widely available.
- Past efforts to provide free broadband have not been successful and there is no reason to believe this effort will be different. Major projects have been abandoned and service providers have encountered financial difficulties trying to implement similar schemes. The proposal envisions a paid-advertising business model, which to my knowledge has not previously been used for broadband infrastructure.

---

<sup>3</sup> See application and discussion on M2Z site, <http://www.m2znetworks.com/>.

## II. A Retreat from Market-Based Spectrum Allocation

In the past, the Commission allocated spectrum to specific uses, defined parameters of use, and assigned licenses to specific parties. Spectrum allocated under this system cannot be transferred from one use to another without the Commission's permission. A large body of research has shown that this command-and-control system leads to inefficient allocation of the valuable spectrum resource. For example, a working group of distinguished economists evaluated this system as follows:

The costs associated with inefficient utilization of the spectrum under this "command-and-control" system have become enormous. The system, designed for a limited and static array of services (and perhaps costly even then), is certainly ill-adapted to the explosion of demand for the airwaves for innovative new wireless technologies. New products come to market later and cost more than they should. Competition and innovation are impeded by the need for new services to fit existing regulatory restrictions. Although it is difficult to quantify all the costs associated with the current regime—especially the costs of innovations forgone or delayed—studies suggest that they could be in the tens of billions of dollars annually or even more.<sup>4</sup>

In recent years, the Commission has moved toward a more efficient, market-based allocation regime. While auctioning the spectrum is an important element of this, and clearly preferable to administrative allocations or lotteries, the key is that more spectrum has been allocated under a flexible license that allows it to move to its

---

<sup>4</sup> Digital Age Communications Act, Report from the Working Group on New Spectrum Policy, Release 1.0, Thomas M. Lenard and Lawrence J. White, Co-Chairs, Stuart Benjamin, Gerald Faulhaber, Dale N. Hatfield, Thomas W. Hazlett, Michael L. Katz, Gregory L. Rosston, and Howard A. Shelanski, Members, <http://www.techpolicyinstitute.org/files/9.pdf>

highest-valued uses. For the AWS-3 spectrum, however, the Commission is proposing an inflexible license, which will not allow this to happen.

The command-and-control aspect of the Commission's proposal will lead to additional complications. For example, the Commission must specify the free, basic tier in great detail, including the data rate, build-out plans, the definition of "indecent" material, and other requirements. All of these are major decisions that can have a significant impact on both the costs and benefits of the proposed service. The Commission can be assured that any requirements it specifies will be subject to lobbying and debate even after an auction, were it to occur. Moreover, whatever service the Commission defines at the outset is likely to be obsolete in five or ten years. The Commission will then have to decide whether it should constantly redefine the level of the free service, meaning the affected parties would be continuously arguing their case before the Commission.

### **III. "Free" Broadband Hasn't Worked**

A number of efforts in the past few years—virtually all of them unsuccessful—have attempted to make "free" wireless broadband widely available. Major projects have been abandoned and the service providers have encountered financial difficulties, as I discuss below.

Moreover, while there may be a rationale for subsidizing broadband service to targeted populations, no market failure justifies subsidies for ubiquitous free wireless broadband. Wireless carriers are spending billions of dollars to upgrade their systems

to provide advanced services, and a whole new generation of wireless broadband services is being introduced. While the Commission is not proposing explicit subsidies, the new service would benefit from implicit subsidies. The proposed service requirements will limit bidding on the AWS-3 spectrum, reducing the cost to the ultimate winner and the revenues to the government. The reduced amount bidders are willing to pay for the spectrum reflects its lower value to consumers and the economy, relative to unencumbered spectrum.

The Commission is proposing to mandate that valuable spectrum be used to experiment with an untested business model—advertiser-supported high-speed Internet service. This is the model envisioned by the original M2Z application. Advertising does support a number of important services. Broadcast and subscription television are supported by paid advertising. Advertising pays for some services and content available on the Web. Private firms, unconstrained by Commission service requirements, are free to use advertising to pay for broadband infrastructure. I am not aware that they have chosen to do so thus far.

Wireless broadband is a relatively new innovation. Building out a nationwide wireless broadband network will be costly and will entail significant technological and business risks. The Commission proposes to add to those risks a relatively untried business model—one that has not been used for this purpose before. The taxpayers will end up bearing the costs associated with these risks, in the form of lower spectrum auction revenues.

If advertising revenues are insufficient, the auction winner could also subsidize the free service by charging a higher price for the higher-quality paid service it will also be providing. However, this could well make the paid service uncompetitive. The auction winner's financial viability would be adversely affected, as would the Commission's policy of promoting broadband competition.

The Commission's proposal and recent efforts by a number of municipalities to provide subsidized free wireless broadband to their citizens share many similarities. While the Commission is not proposing explicit subsidies, it would be subsidizing the free service implicitly. As indicated, the mandatory service requirements would reduce competition for the spectrum and therefore the price to the ultimate winner. This is equivalent to a subsidy. Even so, the objective of making free wireless broadband service widely available may not be successful.

The efforts of municipalities to do something similar, starting with "Wireless Philadelphia", have been almost uniformly unsuccessful. Many municipalities followed Philadelphia in starting municipal Wi-Fi projects and then shutting them down, because they underestimated the costs and risks and overestimated the demand for ubiquitous Wi-Fi service.<sup>5</sup> At the time Internet service provider EarthLink abandoned the Philadelphia project, it had only about 5,000 regular residential and business

---

<sup>5</sup> For an early analysis, see Thomas M. Lenard, *Wireless Philadelphia: A Leap Into the Unknown*, 2005, <http://www.techpolicyinstitute.org/files/13.pdf>

subscribers and 900 customers under the subsidized plan.<sup>6</sup> EarthLink also shut down its Corpus Christi and Milpitas, California projects and stopped the rollout of its projects in Houston and San Francisco.<sup>7</sup> Palm Beach is also shelving its wireless Internet plans.<sup>8</sup> MetroFi, an ISP operating city-wide Wi-Fi networks in Portland (Oregon), Aurora and Naperville (Illinois), and Santa Clara, Cupertino, Sunnyvale, Foster City and Concord (California) is exiting the municipal wireless business.<sup>9</sup>

#### IV. Conclusion

The Commission should auction the AWS-3 spectrum under a flexible license and abandon its plan to require the winner to provide ubiquitous free broadband service. No market failure justifies the Commission's proposal, it is likely to be unsuccessful in any event, and it represents a step backward from the market-based spectrum policy the Commission has been moving toward in recent years. Auctioning the spectrum without specifying the required uses will increase the amount bidders are willing to pay for the spectrum, reflecting its higher value to bidders, consumers, and the economy.

---

<sup>6</sup> [http://www.pcworld.com/businesscenter/article/145835/earthlink\\_to\\_remove\\_philadelphia\\_wifi.html](http://www.pcworld.com/businesscenter/article/145835/earthlink_to_remove_philadelphia_wifi.html)

<sup>7</sup> <http://gigaom.com/2007/08/30/earthlink-end-of-munifi/>

<sup>8</sup> [http://www.palmbeachpost.com/services/content/local\\_news/epaper/2008/05/25/0525wireless.html?cxtyp=pe=rss&cxsvc=7&cxc=76](http://www.palmbeachpost.com/services/content/local_news/epaper/2008/05/25/0525wireless.html?cxtyp=pe=rss&cxsvc=7&cxc=76)

<sup>9</sup> <http://www.muniwireless.com/2008/05/16/metrofi-sellubg-muni-wifi-networks-in-portland-and-other-cities/>